

**ZWS300RC**

SPECIFICATIONS (1/2)

A284-01-01

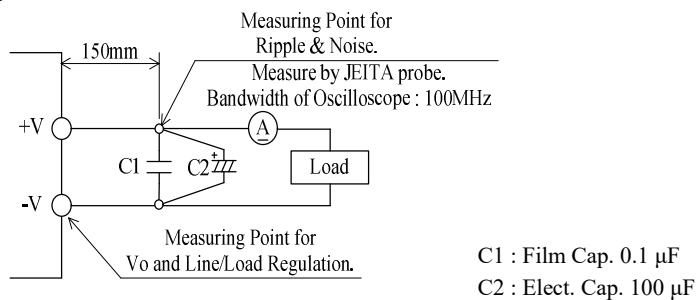
ITEMS		MODEL	ZWS300RC-24
<b>INPUT</b>			
Input Voltage Range	(*2)(*3)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC
Efficiency (Typ)	(*1)	%	88 / 91
Input Current (Typ)	(*1)	A	3.6 / 1.8
Inrush Current (Typ)	(*1)(*4)	-	15A / 30A at Cold Start
PFHC		-	Designed to meet IEC61000-3-2
Power Factor (Typ)	(*1)	-	0.93 / 0.90
<b>OUTPUT</b>			
Nominal Output Voltage		V	24
Output Voltage Setting Accuracy	(*5)	-	±1%
Maximum Output Current		A	12.5
Maximum Output Power		W	300
Maximum Line Regulation	(*6)(*7)	mV	96
Maximum Load Regulation	(*6)(*8)	mV	150
Temperature Coefficient	(*6)	-	Less than 0.02% / °C
Maximum Ripple & Noise (*6)	0 ≤ Ta ≤ 70°C	mV	150
	-10 ≤ Ta < 0°C	mV	180
Output Voltage Range		V	21.6 - 26.4
Hold-up Time (Typ)	(*1)	ms	20
Leakage Current	(*9)	-	Less than 0.5mA. 0.2mA (Typ) at 100VAC / 0.4mA (Typ) at 230VAC
Over Current Protection	(*10)	A	≥ 13.12
Over Voltage Protection	(*11)	V	27.6 - 32.4
<b>FUNCTION</b>			
Remote ON/OFF Control		-	None
Remote Sensing		-	None
Parallel Operation		-	Not Possible
Series Operation		-	Possible
<b>ENVIRONMENT</b>			
Operating Temperature	(*12)(*13)	-	-10 to +70°C
Storage Temperature		-	-30 to +75°C
Operating Humidity		-	10 to 90%RH (No Condensing)
Storage Humidity		-	10 to 90%RH (No Condensing)
Vibration	(*14)	-	At no operating, 10 to 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.
Shock	(*14)	-	At no operating, Less than 196m/s <sup>2</sup>
Cooling	(*13)	-	Convection Cooling / Forced Air Cooling
<b>ISOLATION</b>			
Withstand Voltage		-	Input - FG : 2kVAC (10mA), Input - Output : 3kVAC (10mA) Output - FG : 500VAC (20mA) for 1min
Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC
<b>STANDARD AND COMPLIANCE</b>			
Safety		-	Approved by IEC/UL/EN/CSA 62368-1 (Altitude ≤ 5,000m) Approved by IEC/EN62477-1 (OVCI) (Altitude ≤ 2,000m)
Conducted Emission	(*14)	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B
Radiated Emission	(*14)	-	Designed to meet EN55011/EN55032-A, FCC-A, VCCI-A
Immunity	(*14)	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11
Line DIP		-	Designed to meet SEMI F47-0706 at 200VAC Line only
<b>MECHANICAL</b>			
Weight (Typ.)		g	520
Size (W x H x D)		mm	84 x 42 x 180 ( Refer to Outline Drawing )

\*Read instruction manual carefully, before using the power supply unit.

=NOTES=

- \*1. At 100VAC/200VAC, Ta=25°C, nominal output voltage and maximum output power.
- \*2. For cases where conformance to various safety specs (UL, CSA, EN) are required, input voltage range shall be from 100-240VAC (50-60Hz).
- \*3. Output derating needed when input voltage less than 90VAC. Refer to INPUT VOLTAGE vs. OUTPUT DERATING (A284-01-02\_).
- \*4. Not applicable for the in-rush current to Noise Filter for less than 0.2ms.
- \*5. Output voltage setting at the time of shipment. At 100VAC, nominal output voltage and maximum output current.
- \*6. Please refer to Fig. A for measurement of Vo, line & load regulation and ripple voltage.
- \*7. 90 - 265VAC, constant load.
- \*8. No load-Full load, constant input voltage.
- \*9. Measured by the each measuring method of UL, CSA, EN (at 60Hz), Ta=25°C.
- \*10. Constant current limit with automatic recovery. Avoid to operate at over load or short circuit condition.
- \*11. OVP circuit will shut down output, manual reset (Re power on).
- \*12. Convection cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (A284-01-03\_).  
Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (A284-01-04\_).  
Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.
- \*13. Forced air cooling with air velocity more than 0.7m/sec or 1.4m/sec.  
(Measured at component side of PCB, air must flow through component side).
- \*14. The result is evaluated by TDK-Lambda standard measurement condition.  
The power supply is considered a component which will be installed into a final equipment.  
The final equipment should be re-evaluated that it meets EMC, Vibration and Shock directives.

Fig. A



**ZWS300RC**

OUTPUT DERATING (1/4)

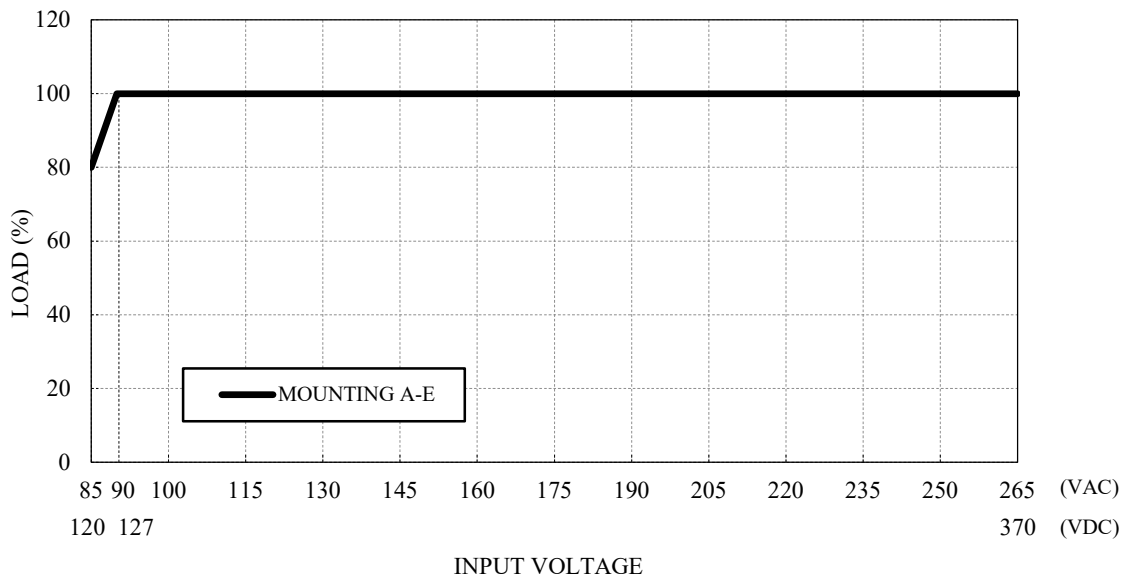
A284-01-02

**INPUT VOLTAGE vs. OUTPUT DERATING**

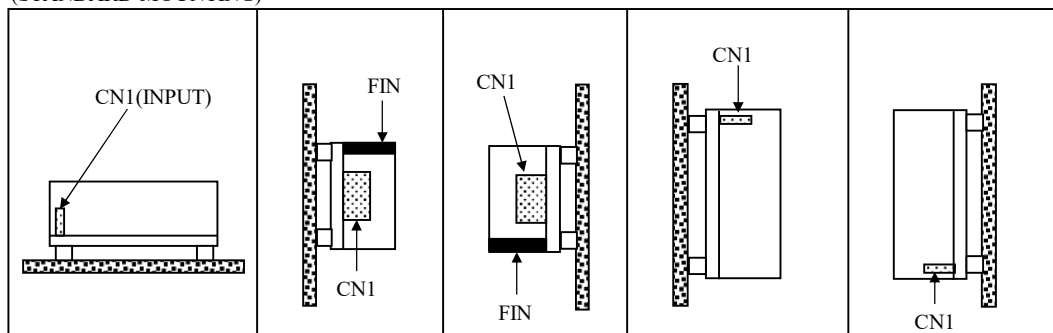
Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.

INPUT VOLTAGE		LOAD (%)
(VAC)	(VDC)	
85	120	80
90 - 265	127 - 370	100

LOAD vs. INPUT VOLTAGE



MOUNTING A MOUNTING B MOUNTING C MOUNTING D MOUNTING E  
(STANDARD MOUNTING)



**ZWS300RC**

OUTPUT DERATING (2/4)

A284-01-03

**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

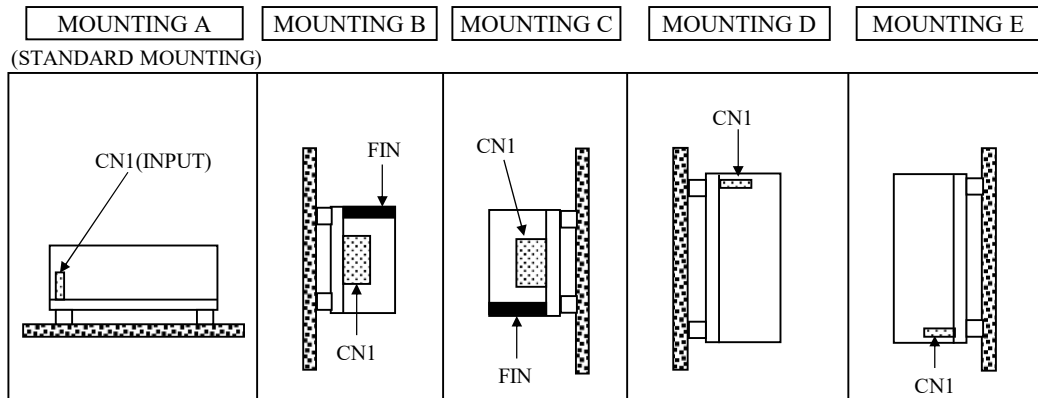
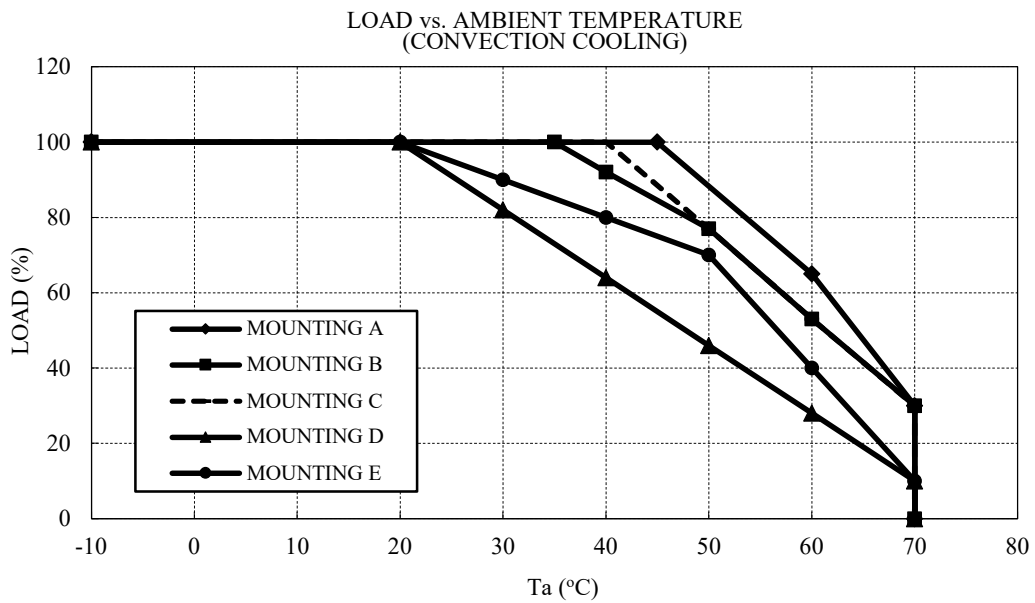
\*COOLING : CONVECTION COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.

When used at  $85 \leq V_{in} < 170VAC$  or  $120 \leq V_{in} < 240VDC$

Ta (°C)	LOAD (%)				
	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D	MOUNTING E
-10 - +20	100	100	100	100	100
35	100	100	100	73	85
40	100	92	100	64	80
45	100	85	88	55	75
50	88	77	77	46	70
60	65	53	53	28	40
70	30	30	30	10	10

\* Output derating needed when input voltage less than 90VAC or less than 127VDC.



OUTPUT DERATING (3/4)

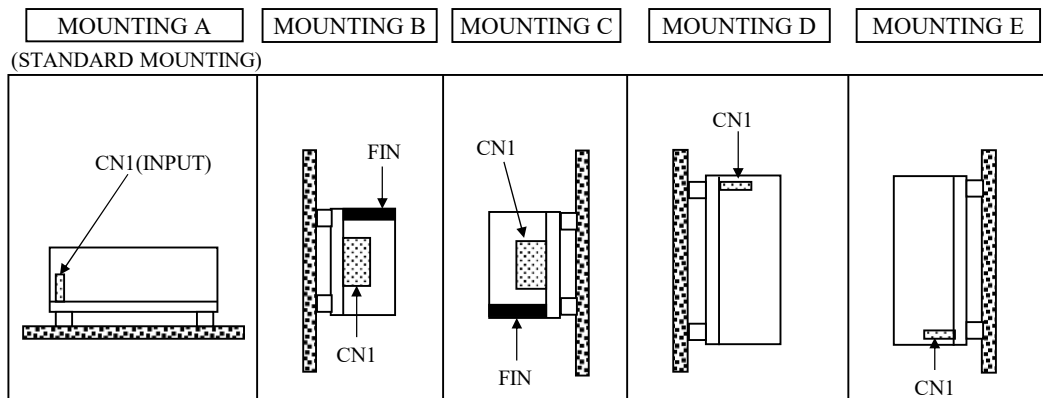
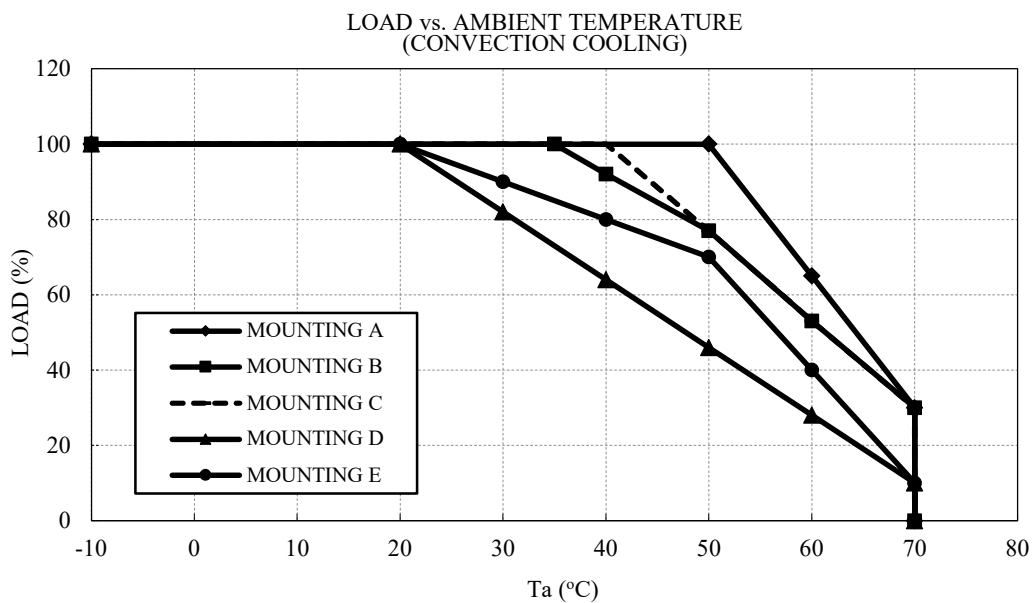
**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

\*COOLING : CONVECTION COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.  
It must not exceed its specification and derating.

When used at  $170 \leq V_{in} \leq 265VAC$  or  $240 \leq V_{in} \leq 370VDC$

Ta (°C)	LOAD (%)				
	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D	MOUNTING E
-10 - +20	100	100	100	100	100
35	100	100	100	73	85
40	100	92	100	64	80
45	100	85	88	55	75
50	100	77	77	46	70
60	65	53	53	28	40
70	30	30	30	10	10



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OUTPUT DERATING (4/4)

A284-01-04

**OUTPUT DERATING vs. AMBIENT TEMPERATURE**

\*COOLING : FORCED AIR COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.

It must not exceed its specification and derating.

Air must flow through component side.

Air velocity  $\geq 0.7\text{m/s}$

Ta (°C)	LOAD (%)
	MOUNTING A-E
-10 - +50	100
70	60

Air velocity  $\geq 1.4\text{m/s}$

Ta (°C)	LOAD (%)
	MOUNTING A-E
-10 - +60	100
70	70

